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## **THE DESIGN OF DECISION- MAKING: A STUDY IN ECONOMIC ADMINISTRATION WITH REFERENCE TO INDIAN ECONOMIC REFORM**

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THE DESIGN OF DECISION-MAKING :  
A Study in Economic Administration with  
Reference to Indian Economic Reform

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## Introduction

Decision-making structures in economic ~~administration~~ can assume a variety of forms. Traditionally, the most important of these is the hierarchy with its pyramidal distribution of authority. Equally interesting however are what Sah and Stiglitz ( Sah and ~~Stiglitz~~, 1985, 1986, 1988; Sah, 1991) call polyarchies -- systems with parallel independent decision-makers (much like market economies ) -- and hierarchies of polyarchies. The choice between these two systems amounts essentially to the choice between centralised and decentralised modes of decision-making and is a question that must be resolved in designing institutions that foster rapid growth. The present paper analyses this choice, both generally and in the particular context of Indian economic development.. In the light of this analysis, it suggests specific improvements in the distribution of decision-making authority in the economic administration of India.

## Varieties of Decision Regimes in Indian Economic Administration

A centrally planned economy is, in principle, one hierarchy. But an economy like India's is much better described as a polyarchy of hierarchies. Here separate and parallel decisions are made not only by firms but also by the various autonomous organs of government (e.g. the centre, the states, the public enterprises etc. ), each of which is typically a hierarchy.

Multiplicity of authorities in government thus may refer either to the number of officials who process any particular decision at a given level of a hierarchy, to the number of layers of the hierarchy, or to the number of separate hierarchies which constitute the state. The interactions of the first two groups are internal to the hierarchy and follow its procedures and power relationships; the interactions of the third group are, on the other hand, mediated by the market.

To cite some examples of decision structures in Indian economic administration, an entrepreneur wishing to set up an industrial enterprise has to traverse a veto polyarchy which even today may well involve 13 separate clearances (Confederation of Indian Industries, 1993). He requires the approval of the Chief Inspector of Factories (under the Factories Act, 1948), the Member Secretary, Pollution Control Board (under the Pollution Control Act), the Director of Town Planning and the Director of Medical Services and the incorporation of the company by the Registrar of Companies (under the Companies Act, 1956). For specific industries defined by the Industrial Policy Statement, he requires a licence from the Secretariat of Industrial Approvals (SIA), Department of Industrial Development. He also needs the approval of the Secretary, Department of Company Affairs; a pre-requisite for the appointment of the Managing Director of any public limited company and the fixation of his pay. Share-holding by foreign collaborators and technical collaborations require clearance by the Exchange Controller of the Reserve Bank of India. Any boiler he uses must be certified by the Chief Inspector of Boilers (under the Indian Boiler

Regulations, 1950). If he uses or stores explosives defined to include even furnace oil, he needs clearance from the Chief Controller of Explosives under the Explosives Act, 1884. If he manufactures drugs or cosmetics, he requires the permission of the Commissioner, Food and Drug Administration. Finally, for the extraction of minerals, he needs the approval of the Director of Mines (under the Minerals Development and Regulation Act 1957 and the Mineral Commission Rules, 1960).

On the other hand, a firm considering alternative locations for a plant in a variety of possible jurisdictions faces an acceptance polyarchy. A number of authorities - states or local governments - would take independent decisions on clearing the plant in their own territories.

In contrast, proposals originating in any ministry climb upward through a decision hierarchy, the length and complexity of which increase with the financial scale of the proposal. Relatively minor routine decisions are left to a linear hierarchy which terminates at a low level. Larger proposals require committee clearance - by the Expenditure Finance Committee of the relevant ministry, chaired by the Secretary of the Ministry, though also including the Expenditure Secretary among its members. Still larger proposals must also go through the Public Investment Board, an inter-ministerial committee presided over by the Expenditure Secretary. Finally, mega-projects require cabinet approval. All committees - apart from the cabinet - are however only recommendatory. They can always be overruled by the relevant minister. The procedure for the

approval of public sector projects or the award of government contracts follows essentially similar lines.

#### Criteria of Choice between Decision Structures

How does one choose an optimal decision regime? What considerations should guide this choice and what are the issues involved?

First, there are the standard desiderata of any public choice procedure - transparency, accountability and insulation from special interests whether individual or collective. Transparency simplifies the public's comprehension of the system, deepens its confidence in it and facilitates and encourages compliance. Accountability - the possibility of identifying the contribution of an individual to a given decision - is the essential basis of any system of incentive for decision-makers. Insulation from vested interests minimises the likelihood of decisions vitiated by corruption and lobbying and of the dissipation of productive resources in rent-seeking. (Krueger, 1974).

Secondly, there is the cost of running the system. Assuming that there are no economies or diseconomies of scale **or** coordination, the number **of** officials involved will be independent of the Structure of the decision-making process. The cost of the system will then vary primarily with the costs of **collection** and **communication** of information.

A third issue is the allowance made by the system for human fallibility. Which decision-structure, one asks, minimises the risk of error? What checks does each system have to contain the consequences of mistakes?

A fourth question relates to the incentives that the system offers, both to decision-makers and their agents. This goes beyond accountability to the sanctions, **the rewards and** penalties used to enforce it. Further, the decision-making structures may affect the inducements, not **only** for better decision-making, but also for higher performance standards elsewhere in the economy.

A fifth issue --which does impinge **on** incentives but also has an independent force of its own -- is that of the citizen's freedom of choice. A wider range of options ( in terms of decision-making authorities) may generate incentives for better decision-making. Even, however, If it did not, it might still add to the citizen's welfare by increasing the variety of choices open to him.

Finally, related to the incentive question, at least in its **longer** run **aspects**, is **the possibility of progress**. One would prefer systems that **contain** the seeds of improvement, those in which selective mechanisms operate not only to raise the performance level of the given decision-makers, but also to bring better decision-makers to the top and to improve the quality of the decision-making regime itself.

## **Public Choice Issues**

### *(1) Transparency*

The transparency of any decision procedure is inversely related to the number of officials and authorities involved in it. Complex **hierarchies**, overlapping Jurisdictions of officials and agencies make any procedure opaque. However, the key question here is uniformity: clearly codified rules, consistently interpreted, with minimal variation- from case to case or official to official are more central to transparency **.than** the arithmetic of mere number. Unfortunately, such uniformity erodes discretion and flexibility and adds to **red tape. A balance must be** struck here, depending on the predictability of the relevant field: if unforeseen contingencies abound, if there is a wide variance **in the** situations encountered, more room must be left for discretion, even at the cost of transparency.

### *(2) Accountability*

Accountability, the clear assignment of responsibility for any decision should be strong where power is concentrated, as in a hierarchy, since the top man in the pyramid **can** in principle overrule all his subordinates. Certainly consensual decision-making, by committee, diffuses responsibility. Indeed, one of the reasons why it is strongly preferred by bureaucrats is precisely this.



However, even with a hierarchic concentration of decision-making power, responsibility can often prove very elusive. Those at the **top** exercise administrative power over their underlings - and must indeed do so if authority is to be preserved. Their communication with their subordinates must for the **sake** of speed be face-to-face, with a large unwritten, verbal component. **The responsibility** for decisions which are not committed to paper is always nebulous: did the Minister himself order a **particular** act or did his **secretary overstep** the bounds of **propriety** in **doing** so himself? India has long experience of such controversies at the highest levels of government. We need only recall the celebrated confrontation between the Finance Minister, T.T. **Krishnamachari**, and his Secretary, H.M. **Patel**, over the **Haridas Mundra** affair in 1957. Even when a decision is written down, a boss may use his control over his subordinates to manipulate their recommendations in such a way that his decision appears to be a logical consequence of the recommendations before him. Hierarchies therefore often concentrate power without responsibility.

### **(3) Immunity to Corruption.**

The major public choice question of course is the amenability of alternative decision structures to corruption and pressure. It can be claimed that there exists a contestable market in government favours; competitive rent seeking by the supplicants for these favours drives up the cost of corruption. If the two highest bidders among the competing parties have equal stakes in the government's decision,

they will bid up influencing cost to the point where it absorbs the entire rent. Otherwise, bribe levels will be determined by the second highest stakes: the party with highest stakes will win the contest for a favourable decision and will still enjoy some rent, despite the transfer of a large fraction to the decision maker through bribes. Thus, according to this view, corruption does not distort decision making - though it absorbs productive resources and redistributes rents. The assumption of course, is that government favours are private goods (e.g. licences) which can be appropriated by private individuals.

Typically, however, the government dispenses collective goods which benefit a large, possibly unorganised mass of people. Olson has shown that organising such groups into effective lobbies for official favours is costly and difficult because of the free rider problem (Olson, 1965) and - contrary to pluralist theory (Bentley 1908, Latham 1952, Truman 1953) or to theories of countervailing power (Galbraith, 1952) - there are marked asymmetries in organisation potential between groups. Thus, corruption is rarely as competitive as visualised above: the negotiation of a deal is more like bargaining under bilateral monopoly than like an auction; and the private cost of corruption (the bribe needed to secure an official favour) is supply-determined (set by the minimum demands of corrupt officials) at least as much as it is demand-determined. Thus, the structure of decision-making is important since it affects the supply of corruption.

A standard argument for a multiplicity of decision-makers to process every decision is that it reduces the likelihood of the capture of the decision-making apparatus by a vested interest. This is based on the assumption that there is a minimum cost of influencing an individual decision maker - a cost dependent on the intensity of public scrutiny or audit to which he is exposed and on his own personal scruples and circumstances. Influencing a number of decision-makers is therefore more expensive than influencing one. Indeed, with many decision-makers, influencing costs may become high enough to deter potential lobbyists and protect the integrity of decision-making. All this argues in favour of multi-layered hierarchies with their multiple checks and balances. There is one proviso however: the man at the top of the hierarchy must also be subject to the checks and balance of open government and an informed and sensitive public. Otherwise, he can use his overriding authority arbitrarily - so that a lobbyist can control the decision-making process cheaply simply by influencing him.

In India, despite hierarchic processing of the award of contracts, the approval of public sector projects and the like, it has often been argued that the costs of corruption are too low to deter anyone. Public scrutiny is limited by a veil of official secrecy. Audits can rarely distinguish between corruption and incompetence; and public servants can rarely be penalised for mere incompetence. Salaries are so low that relatively small bribes seem attractive. It is also

believed that much corruption originates at the very top of any hierarchy: the Official Secrets Act and the concentration of power make it almost impossible to pin the responsibility for malfeasance on the men at the top. Soaring election expenses and the consequent need for campaign funds increase the politicians' susceptibility to financial persuasion. Lobbyists therefore can often save by circumventing the lower layers of officialdom and concentrating on acquiring influence at the top. Hierarchies thus fail to control corruption.

A- related, if different. area of hierarchic functioning is that of audit hierarchies in tax enforcement. If auditors are corruptible, can one design a system which would induce truthful revelation of incomes by tax-payers? Such a system must reward auditors for the detection of each false declaration (whether by a tax-payer or a lower-level auditor) and penalise the perpetrator. Further, the longer the audit hierarchy, the larger the bribe a tax-payer making a false declaration may have to offer to his auditor - since the latter in turn has to bribe his superiors, and so on. This reduces the tax-payer's incentive to understate his income. Gangopadhyay, Goswami and Sanyal have shown that a two-level hierarchy - with a proper specification of rewards and penalties - may suffice to induce truthful disclosure (Gangopadhyay, Goswami and Sanyal, 1992). In their model, of course, the auditor has an incentive to threaten the honest tax-payer with harassment in order to extract a bribe. However, it can be shown that penalties for

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harassment would undermine the credibility of these threats - and the honest tax-payer would ignore them. Unfortunately, here, as in the previous case, the system will not work if it is impossible to distinguish between corruption and incompetence in auditing. Nor will it work if the tax-payer has direct access to the upper layers of the audit hierarchy.

In contrast to hierarchies, polyarchies of individuals do not have multiple checks on corruption... However, a polyarchy has three advantages in dealing with this problem. First, the jurisdiction of each independent decision-maker is narrower than in a hierarchy - so that the returns to corruption are lower. Second, with individuals making independent decisions, accountability for each decision can be clearly identified by the sovereign (the voting public or any other political master) and deterrent punishments accordingly devised. Finally, at least in an acceptance polyarchy, competition among bureaucrats not only improves the efficiency of public services, but also reduces the excess demand for official favours, and the demand price for corruption: the fall in bribe levels may even be drastic enough to deter corruption altogether (Rose-Ackermann 1978). It should be noted, however, that in a veto polyarchy, where each separate agency can demand a bribe, the cumulative effect may be very large bribes.

## Operating Costs

### *Economy of Communication*

The choice between alternative decision structures should also be based on a comparison of their respective operating costs. These depend largely on the speed and efficiency with which they process information. Centralised decision-making - if it is not to be uninformed - involves much delay, expense and error in the acquisition of relevant information by the central authority. Often, the cost of communicating such information to the centre is prohibitive - either because it is non-quantifiable (i.e. based on experience, rather than measurement) or because it is technical in character. The cheapest - sometimes the only possible - way of tapping such information is the participation of its possessor in the decision-making process.

The last point underlines the frequent impossibility of separating the collection and assimilation of information from decision-making. Knowledge is a durable asset which can be re-used at little or no cost in interpreting specific data; the acquisition of knowledge is an expensive and time-consuming process of investment in embodied human capital. Information often cannot be accurately assessed without the expertise of a specialist - an expertise which is the product of a long and arduous learning process and cannot be instantly and costlessly transferred to any one who has not undergone this process. Informed decision-making therefore assigns a decisive role to expert

judgment.

It is not technical knowledge alone that poses a problem. Non-technical but highly specific information is also difficult to mobilise for **centralised** decision-making because its communication is both directly costly and prone to error. A faint inkling of the magnitude of communication costs can be gathered from some statistics about the paper-work it imposes on Indian industry. A public company is required to maintain 16 separate registers (**Confederation of Indian Industries 1993**). A World Bank study in January 1990 records that 118 pieces of paper are needed and an average of 22 hours spent on the documentation for each export consignment, 268 signatures are needed for export clearance, and an estimated 10% of the value of traded commodities spent on paper work and associated procedures (World Bank, 1990). Liberalisation has produced a dramatic decline in the number of documents required for exports - from 118 to only 89 (**Confederation of Indian Industries, 1994**)!

Whenever communication is a necessary input in decision-making, papers have to pass in sequence through a number of hands. All such sequences, whether they serve the essential function of communication or are purely dysfunctional, involve delays. The delays could perhaps be minimised by regular meetings of the individuals involved for decision-making in committee in place of the sequential movement of papers. However, even in a committee, the process of arriving at an agreed decision when several people are

involved, can be immensely time-consuming. Negotiation and bargaining can go on for ever - as the proceedings of the Board of **Industrial and Financial Reconstruction** (BIFR) illustrate (see Appendix 1).

What all this adds up to is a case for a multiplicity of independent decision-makers - wherever their jurisdictions can be separated. We are arguing, of course, for an acceptance polyarchy. A veto polyarchy could be very dilatory indeed -- since its speed of operation is equal to that of its slowest member.

#### ***Loss of Economies of Scale and Coordination***

It is **important** however that the costs and consequent limits of **decentralised** decision-making not be lost sight of in constructing the case for it. These costs arise from the economies of scale and coordination. Independent decision-making generally involves an irreducible minimum of replication. The same information has sometimes to be acquired by, or conveyed to, several different authorities, thus multiplying administrative costs. Bureaucratic norms often imply that an increase in the number of independent decision makers should mean an increase in the number of officials of a given rank and salary (Niskanen, 1971).

More important than these problems of duplication are the externalities generated by decentralised decision-making. These include technological externalities like those associated with hydraulic projects on a river system that flows



through several jurisdictions, or power grids that link several electricity generation and distribution systems. The frictions and costs that these give rise to are well-illustrated by the Kaveri waters dispute between Andhra Pradesh and Karnataka and the conflicts between Gujarat and Madhya Pradesh over the Narmada project or between Punjab, Haryana and **Rajasthan** over the Sutlej-Yamuna link canal. Then there are network externalities as in transport and communications. In railways, telecommunications and postal services for instance the economies of coordination have traditionally been regarded as so overwhelming as to rule out any possibility of decentralised decision-making. Of course, even if a system is indivisible, competition between whole systems may be possible: where large investments in fixed assets are not required (e.g. postal services, though not railways) rival systems may coexist. However, such competition for the same territory - while possible between the public and the private sectors - is hardly conceivable within the public sector. One could artificially force different public offices to compete with each other; but in the absence of a **link** between the government employee's reward and his performance, this artifice will have no effect on efficiency to compensate for the duplication of costs.

Certain problems of coordination must be solved without the guidance of the price system (e.g. the entry of two potential rivals into a market too small to support **both**). Such problems can often be solved in a decentralised manner through Bayesian learning processes - as each rival learns

about the other through waiting and **watching**. But this is a slow process. If speed is of the essence, a centralised, entirely uninformed and random - but quick - decision may be preferable to a time-consuming search for efficiency through the slow extraction of private information. The decisive factors here would be the importance of private information as against the degree of urgency (**Bolton** and **Farrell**, 1990). However, even when in theory, the balance of advantage lies with centralised decision-making, the characteristics of bureaucracy **may** make it incapable of realising this advantage. Bureaucrats are - for fiduciary reasons (see page 26 below) - assured of job security, but with stable and not-very-high salaries. Such secure but financially unexciting prospects attract only the risk-averse : adventurous gamblers are screened out of the bureaucracy. A cadre self-selected along such lines can function only in a slow and deliberate manner with due pauses for the accumulation and assimilation of data. Rapid, essentially blind decision-making - such as **Bolton** and **Farrell** require - is alien to its very nature. And, if central decision-making is also slow, its advantage over **decentralisation** melts away.

Finally, where one decision-maker is in a monopoly, or bilateral monopoly position relative to another, it may impose pecuniary external diseconomies on the latter. A state with a mineral monopoly may tax the mineral. Another may follow an optimal tariff strategy in inter-state trade. We may avert both these possibilities by banning state taxation of monopolised products or of inter-state trade (see page 30 below).

However, a decision-maker who has no monopoly power ex ante may acquire it ex post in a relationship with another if the latter invests in durable assets which are specific to this relationship and cannot be redeployed elsewhere. A state or a public corporation may for instance be one of many suppliers of a particular input. But if a buyer in another state invests in equipment which is closely tailored to the specifications of this supply source, he is at the mercy of the supplier. The supplier can now exploit his ex post monopoly by 'holding-up the buyer on all aspects of their transactions which are not explicitly spelled out in their contract or, which, while contracted for, are expensive to enforce. In such situations, as Williamson has cogently argued, a strong case exists for vertical integration of decision-making (Williamson, 1975, 1985) - which must be balanced against the added bureaucratic costs of integration. Of course, if state enterprises are privatised, one can leave it to the market to determine the most efficient organisational structure.

#### The Risk of Error

Organisations must also be so designed as to take into account another problem - human fallibility, the likelihood of mistakes by the decision-makers, whether in rejecting good proposals or in accepting bad ones. What kind of decision structure would minimise the impact of such human error?

There are two main considerations here. First,

decision-makers differ in ability, and this affects the performance of different systems in different degrees. Second, the errors typical of different decision regimes differ in nature and this is reflected in their performance.

**Decentralised** decision-making implies greater diversity of performance among a larger number of top decision-makers. Since the jurisdiction of each is narrowly circumscribed, exceptionally bad or good decision-makers cannot affect the overall outcome much. On the other hand, if a few decision makers control large areas of life, aggregate performance will be highly sensitive to the quality of these few. The overall outcome will be more volatile in the sense of having a larger variance than with **decentralised** decision-making (given the same mean) (Sah and Stiglitz 1985, 1986).

Much the same principle - the pooling of risks through diversification - can be invoked in favour of decisions by committees rather than individuals. The collective wisdom of the committee is likely to be closer to a simple average than the aberrations of individuals.

Even if we assume a roughly uniform distribution of decision-making ability, there still remains another set of considerations. Suppose that the probability of rejection of a good proposal (a Type-I error) by any decision-maker is  $\alpha$  and the probability of acceptance of a bad proposal (a Type II error) is  $\beta$ . Then, if a proposal has to run the gauntlet

of a veto hierarchy' of length  $n$ , the likelihood of a Type I error increases linearly (to  $n\alpha$ ) while the chance of a Type II error declines geometrically (to  $\alpha^n$ ). On the other hand, with a polyarchy of  $n$  decision makers each independently screening the portfolio of proposals, every proposal has  $n$  independent chances of filtering through "the screen": the probability of a Type II error is now  $\alpha^n$  while that of Type I error falls to  $\alpha$ . Thus, hierarchies are inherently conservative: they tend to err on the side of caution and to reject too many proposals that should be accepted. Polyarchies, in contrast, have an in-built bias towards acceptance - they tend to accept too many proposals. If there exists an external process which selects between proposals and weeds out bad ones. (e.g. the market), 'a polyarchy is clearly a more stimulating organisational design. It imposes less restrictions on innovative ideas, and while it also encourages bad proposals, the latter are easily eliminated by the discipline of the market.

#### Incentives

The key determinant of the efficiency of any decision regime lies, of course, in the incentives it provides for performance. Unfortunately an inherent characteristic of bureaucracy is its inability to offer strong legitimate financial incentives. Public confidence in the integrity of government in handling public funds can be sustained only by statutory limits on its discretion in hiring, firing or paying high salaries. This leaves it without significant positive or negative financial incentives for performance (Stiglitz, 1989). There are of course non-financial

incentives - power, promotion and perquisites. But even these can be linked to performance only if the latter is effectively measurable. In a complex hierarchy, the contribution of each individual to the eventual decision cannot readily be isolated: decision-making by committee - as already noted - compounds the problem by further clouding accountability. Finally, monopolistic decision regimes lack a basis for a comparative assessment of results. Neither the politicians nor the electorate can tell whether the success or failure of a regime reflects its own performance or random factors beyond its control.

All this reinforces the case for competition among decision makers. Parallel independent decision-making (e.g. by agencies of different states or local governments) sets up yardsticks for a comparison of performance and facilitates monitoring (Shleifer, 1985). This works even better where the market does the comparison - for instance, through the differential flow of new industry into regions and spheres controlled by different decision-makers.

However, success in the market for a particular decision regime is not necessarily the strongest incentive for its adoption by politicians. Their political success of course depends on the economic success of their policies - but the correlation is imperfect. A state with an efficient decision regime which attracts industry develops rapidly - and this contributes to the political success of its government. But the link could be strengthened if economic growth adds substantially to the revenue of the state government.

Revenue is a major goal of the politician essentially because it widens the range of his options. It enables him to spend more on **public** goods that benefit the voters and add to his popularity. It increases his power of patronage -- a power he could use to court interest groups or influential individuals who in turn could enhance his electoral prospects or his personal fortune. Finally, the larger the treasury, the better the chances of dipping into it with impunity for private enrichment.

The politician's interest in revenue converges on the **bureaucrat's**. Niskanen [ ] and others have argued that bureaucrats are motivated by salary, perquisites, public reputation, power, patronage, the output of the bureau, operational flexibility, risk aversion and leisure preference. All but the last three of these goals are increasing functions of the size of the budget. Thus, bureaucrats tend to become **budget-maximizers**. Their demand for large budgets heightens the **political** compulsions behind the state's quest for revenue.

How does one translate the state government's thirst for revenue into policies favourable for growth ? If state governments derive the bulk of their income from taxes on value added to production within the state, the competition between states would keep tax rates low, and states would be very strongly motivated to follow policies and adopt decision procedures that stimulate growth.

Yet another incentive - based argument for parallel competing authorities arises from the fact - already mentioned - that decision making and information processing are often closely intertwined. Every decision can be looked at from a variety of perspectives, each with an associated information set that justifies it. All these perspectives and their informational bases must be unified in reaching the final decision. A hydroelectric power project, for example, must be evaluated not only in terms of its financial cost and the benefits it yields for industry and agriculture but also in terms of its environmental impact. All this requires a variety of informational inputs. However, the effect on the final decision of informational input from one viewpoint may be nullified by that from another. If information gatherers are rewarded in proportion to their impact on the final decision, they will have a strong incentive not to find and certainly not to report mutually conflicting pieces of information. As long as search is costly, each will tend to reveal only information favourable to one viewpoint. The resulting loss of information can be avoided if there are several information-gatherers, each explicitly commissioned to support a different viewpoint (Tirole, 1992). The latter model is essentially one of competition between advocates of specific causes. It facilitates the parallel accumulation of possibly contradictory but nevertheless relevant information - and if information gathering and decision-making are inseparable, it would require a multiplicity of parallel decision-makers. To some extent this is ensured by the participation of several ministries with non-congruent



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objectives in any major economic decision (e.g. of the ministries of Industry, Finance and Environment in approving an industrial project). Indian administrative practice conforms fully to this pattern.

This argument does not work if information collection can be rewarded directly, on the basis of the volume of information assembled (regardless of which viewpoint this information favoured). Such an incentive system is, however, impossible to design. Most information cannot be quantified and measured. Even if it could, its quality and reliability would not be assessable a priori - so that incentives based on quantity would run into severe moral hazard problems.

Yet another argument for multiple authorities arises in sequential decision problems where the principal (the state) and his agent play a game over more than one period. Suppose the agent is involved in a project (paid for by the state) in which his efforts influence both initial cost and final benefit. The state would like to minimise initial cost: it can do this only if it linked approval of the second phase of the project to containment of initial cost below a certain limit. If however, the state is a coherent decision-making authority with a simple linear chain of command, it cannot make a threat of this kind credible. It will necessarily approve completion of a project if the promised benefits exceed the costs of the second phase: the costs already incurred would be regarded as sunk and so would not

affect the second phase decision. Since the agent can therefore present the principal with a fait accompli, he would have no incentive to curtail initial costs. In such a situation, a schizophrenic principal is at an advantage; if second phase approval requires the concurrence of an independent authority (say the Finance Ministry) when initial costs exceed a certain ceiling, the agent can be discouraged from shirking in the first phase. The independent authority would have different objectives from the state as a whole and be more exacting in the tests it applies to the project: it may insist that potential benefits should exceed the completion costs by a substantial margin (Laffont and Tirole, 1988, 1993).

#### Extended Choice.

Decentralised decision regimes, if they coexist with unrestricted consumer sovereignty, provide the added benefit of maximising the citizen's range of choice. Citizens can then sort themselves out among different government agencies according to their individual needs and preferences. They could also signal their assessment of the relative quality of each agency -- assessments which could perhaps act as spurs to improved performance. However, a mere multiplicity of agencies is not enough for this. Only if the consumer is free to choose between different agencies and sources can competition and accountability be sustained. It is therefore vital that bureaucratic assignments -- of children to pre-designated schools, patients to specific hospitals, ration card-holders to particular ration shops, buyers

of bottled gas to specific distributors -- be stopped. Voucher systems are essential if efficiency is to be maintained in all these activities. When the citizen can choose between bureaucrats, he can exercise his right of "exit" to real effect and the concept of "a government of the people" acquires meaning and substance.

#### Natural Selection

A final argument for a multiplicity of parallel decision-making authorities lies in the vastly increased possibilities of natural selection that such a regime offers. It fosters a wide variety of decisions as well as decision-makers; competition between these -- through the market or the electoral process -- eliminates the less effective and increases the importance of the more successful. This accelerates the evolution of better policies and decision regimes and the rise of superior decision makers to key positions. A monopolistic hierarchy -- by its unitary character -- stifles all such selective processes.

#### A Decentralised Decision Regime for India

A major upshot of our analysis is a strong case for a substantial delegation of decision-making power and financial resources from the centre to the states and local authorities,

A classic example of this mechanism is the fiscal decentralisation of the Chinese economy. In China, Maoist

guerrilla tradition and the disintegration of central administrative authority during the Cultural Revolution have fostered a cellular economic pattern with considerable local autonomy and self-reliance (Guha, 1981). Provinces, cities and townships depend on the profits of local enterprises for almost all their revenue - and this has generated intense competition among local and provincial governments in attracting industry and intense pressure for profits on all industry, public as well as private (Chen, Jefferson and Singh 1992, McMillan and Naughton 1992, Guha 1993). In India, this objective would lead us to suggest a devolution of the bulk of excise revenue to the states - while reserving direct taxes and customs for the central government. This implies a division of revenues between centre and states almost diametrically opposite to the injunctions of our Finance Commission. The latter have in recent years, determined the states share in income taxes as 85% of net receipts as against 20 - 45% in union excise duties, with the allocation of each state being essentially independent of its level of output. A link between a state's contribution to GDP and its share in revenue is thus contrary to our constitutional traditions (See Appendix II). But - if coupled with a federalisation of major economic decisions - it could dramatically improve incentives for decision-making and performance in the public domain. Such a link -- between the revenue of a state and its performance -- is best forged by assigning to the state the full value at the margin of all indirect taxes on value added within the state.

## The Benefits of Decentralisation of Decisions and Finances

This is a theme which has been elaborated in the theory of competitive federalism (Brittan, 1981, King, 1984) as well as the theory of local expenditure (Tiebout, 1956). According to these theories, there are three distinct factors which induce competition **between** states and local governments that results in efficient provision of public services and infra-structure and minimal rates of taxation. First, the **demonstration effects of policies followed in other jurisdictions** generate pressures among the residents for comparable or better levels of **efficiency** in service; the citizen is impelled to raise his "voice" ( in Hirschman's [ | language) in demands for superior governmental performance. Second, the inter-jurisdictional mobility of consumers implies that states with a poorer policy framework will ceteris paribus lose their population to better-administered regions. The impact of such "exit" (again Hirschman's term) is accentuated by its selective character : the migrants are often the most affluent and skilled segments of the population, since the affluent have the greatest capacity to move and the skilled are likeliest to find work in a new milieu. Such a selective outflow of wealth and talent gravely impoverishes a state and 'ts government and constitutes a major incentive for better administration. The migration of capital ( yet another form of "exit" ) in search of well-developed infra-structure, favourable policy regimes and liberal **tax-administration** is perhaps an even more potent instrument of competition.

One of the many benefits of such competition -- a benefit which has not been widely noticed -- is the **minimisation of corruption.** Corruption represents a drain from the public exchequer: it increases the cost of public services and leads therefore to higher tax-rates, fewer public services or both. In a competitive system, local and state governments must either reduce corruption or face an exodus of capital and skill and a possible voter revolt.

Tiebout's classic argument for decentralisation, of course, is that it facilitates the fine-tuning of tax-expenditure patterns to local preferences. The process works both ways. Governments may adjust fiscal regimes to the tastes of local **residents.** Alternatively, citizens may "vote with their feet", moving towards those tax-expenditure packages which conform most closely to their specific interests.

A final benefit of **decentralisation** derives not from competition nor from product differentiation by the various governments but from the smaller scale of government. The individual citizen feels more effective in a smaller unit of organisation. He believes that his opinions may matter and so is more inclined to participate and exert his "voice" on issues of government.

#### The Costs of **Devolution**

As against these benefits of the scheme we have suggested, one must also count the costs.

The first major criticism of regional and local variation in tax-expenditure regimes is that it distorts resource-allocation away from natural comparative advantage. This is a problem with two dimensions. (1) The commodity composition of output may be distorted due to regional differences in the patterns of taxation and the provision of public goods which sever the link between relative costs and the natural comparative advantage of each region. (2) The distribution of aggregate economic activity between regions may be disturbed by regional differences in the overall levels of taxation and expenditure. However, the possibility of competitive differences in tax-expenditure regimes does not mean that such differences will persist in the long run. If, for instance, the tax-public good package in state A favours industry X more than that in state B, the migration of X from B to A should induce the governments of both states to bridge the disparity (unless it reflects their considered choice). Thus, in equilibrium, the differences in tax-expenditure patterns between states should reflect variations in the preferences of local residents. Likewise, if states must balance their budgets and compete with each other, the tax-expenditure level of each will in the long run be set by its taxable capacity (and therefore its resource endowment) and by its preference for public goods. Distortions are short run phenomena-- except when state budgets are subsidised in the interests of public policy.

A second argument against fiscal decentralisation is that it would lead to competitive tax cutting by the states to the point where their entire revenue base evaporates. Certainly, revenue-maximising excise rates may not be sustainable. However, if the states face hard budget constraints, they are unlikely to reduce rates below the Bertrand equilibrium levels at which the second most efficient of them can balance its budget. All states would be under strong pressure to improve efficiency and control waste so that they can balance their budgets.

Thirdly, states could tax natural resource products over which they have a monopoly at revenue-maximising rates, increasing costs and undermining growth in all other states. However, one could always legislate that natural resource monopolies be taxable only by the centre, the states being compensated by direct grants linked to some parameter which has no relation to the budget deficit.

Fourthly, states could tax inter-state trade with severe adverse repercussions on resource allocation and growth everywhere. This problem could be resolved only by banning taxes on inter-state trade and all other barriers to nation-wide mobility of goods and factors.

Fifthly, poorer states, which need public goods (e.g. poverty alleviation programme) more acutely, would be unable to meet these basic needs unless the centre provides budgetary support - but if central aid is linked to the gap



in the unsupported budget, the state's incentives for efficiency and economy would melt away. This too is not an insoluble problem. States with special needs should receive fixed grants based not on current performance or need, but on some determinant of need at the outset of the new scheme (e.g. on the number of poor people in the state on the date when the new fiscal regime is first contemplated). Indeed, the incentive effects of our scheme are functions only of what happens at the margin to state finances; they are independent of any kind of lump-sum transfer from the centre to the states or vice versa. In principle, therefore, our scheme is compatible with any initial distribution of total revenue between the centre and the states. This could be accomplished through a system of transfers which would be fixed in absolute value, and not affected in any way by the relative performance of the transferors or recipients.

Sixthly, it has sometimes been argued that a reduction in the centre's fiscal role would limit its capacity for macro-economic management. Lower volumes of revenue leave less room for macro-economic manipulation. The macro-economic instability of China with its violent oscillation between inflationary over-heating and episodes of relatively slow growth has been cited as illustrative of the perils of a weak central fisc. Protagonists of the opposing view however attribute China's macro-economic volatility to the weakness of its central monetary authority. The Bank of China has no control over regional and local banks so that violent credit cycles accentuate every real fluctuation. The Reserve Bank of

India is a far more effective central monetary authority. It can certainly control state-level credit explosions and set limits to state budget deficits. If the centre practises fiscal discipline, there is no reason to assume that macro-economic policy will be unsuccessful when contraction is called for. When expansion is required, our scheme should pose no problems: it limits central revenues, not expenditures, and is therefore compatible with any level of planned deficit.

The most important problems with decentralisation however arise out of political economy considerations. It can plausibly be argued that smaller decision-making units are more vulnerable to factional pressures. An organised interest group faces less competition within a state than at the centre, and even less within the jurisdiction of a local authority. It is therefore more capable of influencing decision-making at the local and state levels: it can steer policy further away from the social optimum. It may even succeed in capturing the local government. This argument assumes that the scale on which interest groups are organised is independent of the size of government. If interest group formation requires a certain critical mass, this can obviously be attained more easily in a larger territory: the latter will therefore accumulate more competing groups. However, smaller governments can be influenced by smaller groups-- and this itself could be an incentive for group formation in smaller jurisdictions. It would be difficult to generalise a priori that small territories foster group monopoly rather than group competition.

In the context of India, a separate -- if related -- problem is perhaps more crucial. Our analysis assumes that government -- at all levels -- actually functions, that the official decision-makers enjoy the substance, and not just the shadow, of authority. Decentralisation **could work only** if the writ of the local government actually runs, if the machinery of law and order and justice reach down to the local grass-roots and electoral processes have at least a minimum of credibility. Bihar, for instance, has been widely described as a state of anarchy, one which, unlike India as a whole in Galbraith's picturesque account, has ceased to **function**. Here, guns and **lathis** rule. The representatives of the state government -- when they are not themselves part of the problem -- are a mere fleeting presence, only too **eager to leave the field to the** warring local mafiosi. In such an environment, the devolution of powers and resources can only empower and enrich the local gangs. Pervasive violence is not a milieu favourable to **decentralised decision-making or, for that matter, to the** functioning of the market. But nor can it support an effective civil authority of any kind. The restoration of a minimal framework of law and order here is the prerequisite of administration -- and the fine-tuning of decision-making processes must necessarily be deferred till then.

### **Fiscal Decentralisation and its Practical Limitations**

To sum up the main features of our scheme, we propose to devolve to the states all major functions but for a certain

class of exceptions. These are the activities that require economies of scale or generate externalities across state' boundaries. Examples are **defence**, currency and banking, railways, civil aviation, long-distance telecommunications, inter-state power grids, river valley development and foreign **trade**. A devolution on the same principles is proposed from states to local authorities ( eg. in local development works, local roads and water management, primary education).

This massive curtailment in the role of the centre is to be matched by a reduction in its revenue base. The centre should essentially withdraw from the indirect tax field -- except for customs and perhaps a few sumptuary excises. the fall in central **revenue due** to abolition of central excises will only be partially offset by the centre's retention of the bulk of direct **taxes** ( particularly the income tax ). The states should **tap** the field vacated by the centre through the instrument of state value-added taxes.

The states' powers of taxation of value added would be subject to two constraints. (1) Taxation of inter-state **trade** would be totally banned, and (2) natural resource monopolies (eg. iron ore, fossil fuels, tea ) would be taxable only by the centre.

Any desired scheme of transfers -- whether from the centre to the states or vice versa or between the states -- could be incorporated in this system. However, all such transfers would have to be absolutely fixed in value at least

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for the foreseeable future. They would then be handicaps in a race and would produce no incentive effects on any one. The transfers could aim at enhancing the capacity of the centre to fulfil its functions in the new regime. Or they could compensate natural resource- rich states for the assimilation of natural resources into the centre's tax net. Perhaps, they could also compensate poorer states for their poorer resource endowment and their inherently limited tax-base. Such a scheme of transfers could be implemented through the Finance Commission with no more difficulty, than the present system with its disastrous impact on the states' incentives for fiscal prudence.

However, given the pattern of transfers, the states should be subject to strict fiscal and monetary discipline. Budget deficits should not be covered by an expansion of transfers or of Reserve Bank credit. The deficit state would have to borrow from the market and would per force have to maintain credit-worthiness and credibility.

What are the practical implications of these proposals? The centre's income from excise taxes ( net of devolution to the states ) is in the range of Rs. 18,000 crores. Not all of this would be lost. Some Rs. 5000-6000 crores could be recovered through a few **sumptuary** excises ( on tobacco and tobacco products, petroleum products, automobiles, aerated waters etc. ). The balance of the loss ( of Rs. 12,000 crores or so ) would have to be absorbed through (1) a reduction in the states' share in income tax ( about Rs. 6000 crore ), (2) a cut in central grants to the states ( about Rs. 18,400 crore ),

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and (3) a reduction in central expenditure in tune with the delegation of a number of the centre's functions to the states-. These are radical changes. But they are indispensable for any dramatic improvement in the incentives for decision-making.

Fortunately, all this does not necessitate a constitutional amendment -- at least as long as the states' share in income-tax is not totally abolished. However, it does require the conversion of the Finance Commission to a viewpoint radically different from -- if not diametrically opposite to -- that adopted by earlier Finance Commissions. It calls for a sacrifice by both centre and states of assured sources of income ( of excise taxex by the centre and of central grants and transfers and of inter-state trade taxes by the states ) for unfamiliar and uncertain ones ( like state value added taxes ). Such a gamble is bound to be unattractive to risk-averse governments. Further, the centre is required by our scheme to divest itself of revenues and functions, thus undermining its own political role. No political entity is likely to welcome such an apparently suicidal course. Yet if the central authority has political vision and courage, it will look beyond the immediate loss of its powers of patronage to the long run gains that a better decision regime wil' produce in terms of economic growth and its beneficial political fall-out. The states, at least the more enterprising and innovative of them , should also be alive to the opportunities that the scheme we propose opens up for them. It is vital, however, that the whole scheme be adopted as an indivisible

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package without its components being diluted by piece-meal bargaining.

### **Prerequisites for the Success of Decentralisation**

We have already mentioned one of the prerequisites for the success of such a scheme -- the existence in the states and districts of a minimum framework of law and order. Another important factor bearing on its success is political stability. Economic growth requires a long planning horizon, a sacrifice of present welfare for future benefits. This raises a number of major issues in a democratic environment and necessitate a brief excursion into the political economy of growth and its links with the theory of public choice in a democracy.

As Modigliani and others have theorised [ I. individuals do plan their savings over long horizons, extending over their entire life-spans and beyond into the life-spans of their heirs. When, however, this accumulation process is mediated by the state, three kinds of problems arise.

First, tax-financed accumulation essentially produces public goods. Since no one can be excluded from using a public good, the distribution of its benefits is entirely independent of the distribution of its costs. Thus, the sharing of the burden of a public good becomes the focus of intense political bargaining, jealousy and discontent. So does the sharing of benefits ( which depends essentially on the mix of public goods

produced ).

Secondly, the state commandeers resources away from individuals and then assumes control of their use...The citizen will acquiesce in this process only if he feels a strong bond of identification with the state and its purposes. In the absence of such a sense of identification, he will resist even what he perceives as a fair exchange of burdens for benefits (not just because he would prefer a free ride, but also because he does not believe 'the promised benefits will actually reach him)

Thirdly, with periodic elections, a government may not be able to make long-term commitments to its constituents or any body else. If it is expected to be short-lived, its promises of long run benefit will not be credible and it will be judged only on the basis of the immediate consequences of its actions. Thus, political instability-- by generating expectations of further instability -- distorts the whole structure of political motivation away from growth towards short-run benefit even at the expense of the future.

The implications of all this for our **decentralisation** scheme depend on the relative stability of the central and state governments. In India, the central government has a remarkable record of stability: barring the brief episodes of 1977-79 and 1989, the Congress party has governed the country continuously for over forty years, taking easily in its stride the assassinations of two of its leaders and the deaths in office of two others. A very few states



(notably Maharashtra and Karnataka ) have similar records of stability. But most states have been characterised by far more violent fluctuations in the balance of political power This is one of the major perils of decentralisation. It may mean a transfer of power and resources from relatively stable governments to relatively less stable ones -- with a consequent shortening of planning horizons and a sacrifice of growth. Many of the beneficiaries of the decentralisation process would have time-horizons of a year or two and cannot be expected to take any decisions with a longer gestation lag.

Along with the disintegration of authority in certain states and districts, political instability in certain states would thus pose the most serious problems for a scheme of devolution. Ultimately, of course, the only economic regime that works in a politically unstable environment is one of minimal government since this limits the damage that short-sighted governments could cause.

#### A Return to Feudalism?

It can be claimed -- and it has sometimes been claimed about similar schemes of decentralisation -- that this amounts to a feudalisation of the economy. Indeed, the dilution of central authority and the regional diffusion of power and resources do closely resemble the feudal model. Where regional or local power has been captured by strong interest groups, the similarity to baronial rule is further accentuated.

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However, there does exist an absolutely basic difference between our model and the feudal one. Feudalism was rooted in immobility -- spatial immobility between different baronies, occupational **immobility** between different castes. It was sustained by a primitive transport technology and reinforced by man-made restrictions on movement across geographical and social boundaries. On the other hand the essential dynamics of our model arise from free flows of factors and goods within and across regions. It is through extended choice of consumers and producers between different locations and different decision-making authorities that competition is intensified -- and this intense competition contrasts sharply with the sheltered monopolies that **characterise** feudalism and account for its economic inefficiency.

At the **same** time, decentralised power structures -- even inefficient feudal ones -- have certain major advantages. Economic historians have dwelt on the fact that the two main long-run success stories of the Industrial Revolution in the **old** World -- Western Europe and Japan -- both emerged out of feudal **origins** [ Jones ]. **Many** have commented on the contrast between the early and rapid transformation of Japan and the painfully slow century-long transition in the **centralised** bureaucratic empire of Manchu China. This should come as no surprise whatever. As already pointed out, decentralised decision systems offer more scope for experiment and innovation and for competitive natural selection. They contain therefore the seeds of progress.

## Conclusion

Our analysis- without being overly dogmatic - makes out a case for extensive **decentralisation** of decision making even within government. We argue that it reduces the likelihood of corruption, **economises** on communication, minimises the adverse impact of bad decisions **or** bad **decision-** makers, fosters innovation, heightens efficiency through competition and opens avenues for administrative improvement. We also argue that concentrated decision-making need not mean greater accountability.

In India, our federal structure offers scope for such parallel independent decision. making - but its **possibilities** have **never** really been fully explored. **In part,** this is because of the financial dependence of the states on the centre. Indian states and local governments collect relatively little of their revenues but are supplicants for the largesse of the Central government. Indeed, the constitution and the Finance Commissions ensure that the revenues of any state bear virtually no relationship to the volume of production it supports, or to the profitability of its production. States on average collect only 43% of their expenditure **requiremnents** themselves. **The balance of** their needs is met by transfer from the **cen'tre.** allocations being determined basically by criteria of need - population, per capita income, socio-economic backwardness etc. [Govinda Rao, 1994]. The disconnection between output and revenue could hardly be more complete [See Appendix II]. This undermines state and local incentives for efficiency and the entire case

for decentralised decision-making. We argue however that the advantages of multiple decision-making authorities are sufficient to justify an experiment in increased federal and local autonomy - both in terms of powers and resources. The resources, however, must be raised by the states and local authorities - and we suggest that they may be permitted to do this essentially through indirect taxes on value added. The centre should not bail out states from the ill effects of their wrong decisions: impecunious states would have to borrow from the market.. not from the Reserve Bank. Also, no state or local authority should be permitted to restrict the flow of goods and factors across its boundaries [Covinda Rao, 1993 I. The mobility of goods and resources. - Hirschman's right of free 'exit' [Hirschman, 1970] - is the basic prerequisite for successful competition between the states: diluting it would severely limit the impact of decentralisation of decision-making on efficiency.

Our suggestions then are reminiscent of Tiebout's classic case for local government [Tiebout, 1956]. Tiebout stressed the desirability of a variety of choices of residence for citizens, of 'product differentiation' by local communities offering different mixes of public goods and taxation for prospective residents. Crucial to this was a highly mobile population. We emphasise industrial mobility - and enforced competition for industry between states and cities with different decision regimes, policies and infra-structural facilities. That is the best way, we believe, to dynamise our economic administration.

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## Appendix I

### Decision Making in the BIFR

The **proceedings** of the Board of Industrial and Financial Reconstruction (BIFR) are classic examples of almost infinitely protracted deliberation, often without any decision at all. When a firm is on the brink of bankruptcy it is not permitted by government to **close** down but is referred to the BIFR for possible rehabilitation. The following process then ensues :

1. The BIFR has 3 months to **scrutinise** the case to determine whether the firm is really "sick". If not, it is required to turn itself around unaided, though, if unable to do so, it can apply again later for a fresh reference to BIFR.

2. If the firm is "sick", it is registered as a BIFR case. This process takes about 2 months.

3. The BIFR then takes a month or two to ask the company to prepare a draft rehabilitation scheme - unless it judges rehabilitation to be totally infeasible. Alternatively, it may appoint a lead financial institution or **bank** to become the operating agency (OA) of the firm on behalf of BIFR and to draft a rehabilitation plan.

4. The company is given 60 days to prepare the plan, the OA 3-4 months.



5. In either event, the draft scheme is presented for hearings. If even one of the interested parties vetoes it, it goes back to the firm or the OA for preparation of a new **plan**. Each such loop occupies 4 months.

6. If 1 - 1 - years pass in this process, some one claims that the assumptions of the original schemes have become outdated, and the BIFR asks the OA for a fresh scheme.

7. If the BIFR **considers** a turnaround totally 'infeasible', the company must show cause for winding **up**.

8. If there are no objections to this, then the firm can indeed **wind up**.

9. If, however, there are **objections**, the BIFR considers whether, despite the problems, rehabilitation is in the public interest. In most cases, it decides in the affirmative and the entire cycle of draft schemes, hearings and revisions begins.

## **Appendix II**

### **Centre-State Transfers in India**

There are **three** kinds of centre-state revenue **transfers** in India: (i) non-plan general-purpose transfers of the proceeds from personal income tax and union excise duties as mandated by the Finance Commission, (ii) general-purpose plan assistance on the basis of the modified **Gadgil** formula, (iii) specific-purpose transfers with or without matching provisions.

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1. Finance Commission Transfers:

The Second Report of the Ninth Finance Commission (1990-95) allocates 85% of net yields from personal income tax and 45% from union excise duties to the states. The shares of individual states in income tax collections are determined by four criteria - (a) per capita state domestic product (which has a 56.26% weight), (b) population (22.5% weight), (c) the state's contribution (10%) and (d) a composite index of backwardness depending on the population of scheduled castes and tribes and the number of **agricultural** labourers (11.25%). The shares of states in excise taxes are likewise determined by four criteria - (a) per capita income (46%), (b) population (25%), (c) the composite index of backwardness (12.5%) and (d) the deficits computed after devolving assigned taxes (16.5%).

2. State Plan Transfers :

The **Gadgil** formula, as revised in 1991, allocates 30% of all plan transfers to the special category states and 70% to the 15 major states outside the special category. The shares of each of the latter depend on population (50%), per capita income (25%), tax effort, fiscal management and fulfilment of national objectives (2.5% each) and special problems (7.5%).

3. Specific Purpose Transfers :

These include central projects (fully funded by the centre) and centrally sponsored schemes (whose costs are shared with matching ratios that vary from activity to activity but not from state to state). The latter have *now* swelled to 36% of plan transfers and 20% of total current transfers.